



A service of the National Library of Medicine
and the National Institutes of Health

My NCBI
[Sign In] [Regis]

All Databases

PubMed

Nucleotide

Protein

Genome

Structure

OMIM

PMC

Journals

Book

Search **PubMed**



for

Go

Clear

Limits Preview/Index History Clipboard Details

Display **Abstract**



Show

20



Sort by



Send to



About Entrez
NCBI Toolbar

Text Version

Entrez PubMed
Overview
Help | FAQ
Tutorials
New/Noteworthy
E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
Special Queries
LinkOut
My NCBI

Related Resources
Order Documents
NLM Mobile
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

1: [Biochim Biophys Acta](#). 1981 Dec 7;649(2):377-84. Related Articles, Links

Inhibition of growth of *Escherichia coli* by lactose and other galactosides.

Wilson DM, Putzrath RM, Wilson TH.

A study has been made of the inhibition of growth caused by the addition of lactose or other galactosides to lac constitutive *Escherichia coli* growing in glycerol minimal medium. The effect was greater at pH 5.9 and pH 7.9 than at pH 7.0. Inhibition of growth by lactose was observed also in the case of a beta-galactosidase negative mutant. However, a lacY mutant, which has a defect in the entry of protons normally coupled with galactoside transport, showed only slight inhibition of growth on the addition of galactosides. In the case of the parental strain the addition of lactose resulted in a sharp fall in delta pH across the cell membrane and a reduction in intracellular ATP, and the recovery was slow. Under the same conditions the lacY mutant showed a smaller and only transient effect. It is postulated that the sudden entry of protons associated with lactose uptake lowers the protonmotive force, reducing the ATP levels and inhibiting growth of the cells. This hypothesis would account also for the selection of lacY mutants found when *E. coli* is grown in the presence of isopropyl-beta-D-thiogalactoside.

PMID: 7032592 [PubMed - indexed for MEDLINE]

Display **Abstract**



Show

20



Sort by



Send to



[Write to the Help Desk](#)
[NCBI](#) | [NLM](#) | [NIH](#)
[Department of Health & Human Services](#)
[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)

May 22 2006 06:31:57